

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A ~~local~~ communications network providing communication between a mobile station and a ~~fixed radio frequency~~ stationary station, the ~~local~~ communications network comprising:

a relay antenna providing a first wireless link with the mobile station and dedicated to a Base Transceiver System (BTS) station as the stationary station; and

a second ~~wireless radio frequency transmission~~ link which links the relay antenna to the ~~fixed radio frequency~~ BTS station to which the relay antenna is dedicated, wherein

the second ~~wireless radio frequency transmission~~ link includes, at the relay antenna, a demodulator demodulating high frequency signals received at the relay antenna from the mobile station, removing the carrier from the high frequency signal signals that are received by at the relay antenna, and producing low frequency signals that are transmitted to the BTS station on the second wireless link.

2. (Currently Amended) The ~~local~~ communications network in accordance with Claim 1, wherein the first ~~wireless radio frequency transmission~~ link includes means for transmitting and receiving signals at selectable frequencies in a range from 400 MHz to 18 GHz.

3. (Currently Amended) The ~~local~~ communications network in accordance with Claim ~~2~~ 1, wherein the second ~~wireless radio frequency transmission~~ link includes a first electronic device associated with the relay antenna ~~and~~, a second electronic device associated with the ~~fixed radio frequency~~ BTS station, and a wireless transmission channel connecting the first and second electronic devices.

4. (Currently Amended) The ~~local~~ communications network in accordance with Claim 3, wherein the first electronic device includes means for analog/digital conversion and the second electronic device includes means for digital/analog conversion.

5. (Currently Amended) The ~~local~~ communications network in accordance with Claim 3, wherein the first and second electronic devices include means for compressing or decompressing the a signal to be transmitted.

6. (Currently Amended) The ~~local~~ communications network in accordance with Claim 3, wherein
the relay antenna includes a multiband antenna, and
the first electronic device includes means for identifying a channel on which signals to be transmitted are received by the multiband antenna.

7. (Currently Amended) The ~~local~~ communications network in accordance with Claim 3, wherein the first electronic device includes means for verifying presence of a ~~fixed radio frequency~~ BTS station functioning at a frequency at which signals to be transmitted are received by the relay antenna.

8. (Currently Amended) The ~~local~~ communications network in accordance with Claim 1, including a plurality of ~~fixed radio frequency~~ BTS stations, each ~~fixed radio frequency~~ BTS station functioning at a predetermined frequency and communicating with a multi-band antenna.

9. (Currently Amended) The ~~local~~ communications network in accordance with Claim 4, wherein the first and second electronic devices include means for compressing or decompressing the a signal to be transmitted.

10. (Currently Amended) The ~~local~~ communications network in accordance with Claim 4, wherein

the relay antenna includes a multiband antenna, and

the first electronic device includes means for identifying a channel on which signals to be transmitted are received by the multiband antenna.

11. (Currently Amended) The ~~local~~ communications network in accordance with Claim 5, wherein

the relay antenna includes a multiband antenna, and

the first electronic device includes means for identifying a channel on which signals to be transmitted are received by the multiband antenna.

12. (Currently Amended) The ~~local~~ communications network in accordance with Claim 4, wherein the first electronic device includes means for verifying presence of a fixed radio frequency station functioning at a frequency at which signals to be transmitted are received by the relay antenna.

13. (Currently Amended) The ~~local~~ communications network in accordance with Claim 5, wherein the first electronic device includes means for verifying presence of a fixed radio frequency station functioning at a frequency at which signals to be transmitted are received by the relay antenna.

14. (Currently Amended) The ~~local~~ communications network in accordance with Claim 6, wherein the first electronic device includes means for verifying presence of a fixed radio frequency station functioning at a frequency at which signals to be transmitted are received by the relay antenna.

15. (New) A communications network providing communication between mobile stations and stationary stations, the communications network comprising:
a plurality of Base Transceiver System (BTS) stations as the stationary stations;
a plurality of relay antennas, each relay antenna being dedicated to a respective BTS station and providing a respective first wireless link with some of the mobile stations and the BTS station to which the respective relay antenna is dedicated; and
a plurality of second wireless links, each second wireless link linking a respective relay antenna to the BTS station to which the respective relay antenna is dedicated, wherein

each second wireless link includes, at the respective relay antenna, a demodulator demodulating high frequency signals received at the relay antenna from the mobile stations, removing the carrier from the high frequency signals that are received at the relay antenna, and producing low frequency signals that are transmitted to the BTS station to which the relay antenna is dedicated, on the respective second wireless link.

16. (New) The communications network in accordance with Claim 15, wherein each of the second wireless links includes a first electronic device associated with the respective relay antenna dedicated to the respective BTS station, a second electronic device, associated with the respective BTS station to which the relay antenna is dedicated, and a wireless transmission channel connecting the first and second electronic devices.

17. (New) The communications network in accordance with Claim 16, wherein each of the first electronic devices includes means for analog/digital conversion and each of the second electronic devices includes means for digital/analog conversion.

18. (New) The communications network in accordance with Claim 16, wherein each of the first and second electronic devices includes means for compressing a signal to be transmitted.

19. (New) The communications network in accordance with Claim 16, wherein each of the relay antennas includes a multiband antenna, and each of the first electronic devices includes means for identifying a channel on which signals to be transmitted are received by the respective multiband antenna.

20. (New) The communications network in accordance with Claim 16, wherein each of the first electronic devices includes means for verifying presence of a BTS station functioning at a frequency at which signals to be transmitted are received by the relay antenna dedicated to the respective BTS station.